AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listing of claims in the application.

Listing of Claims:

1.   (Currently Amended) A remote copy system which copies data between a plurality of storage systems, comprising:

a first storage system comprising a first controller and a first primary volume;

a second storage system comprising a second controller and a second primary volume;

a network apparatus which is coupled to a host computer, said first storage system and said second storage system, and which controls a path for accessing from said host computer to said first primary volume and a path for accessing from said host computer to said second primary volume; and

a third storage system which is coupled to said first storage system and said second storage system, and which comprises a third controller and a secondary volume; wherein:

~~said first storage system stores data received from the host computer into said first primary volume, and sends the data stored in said first primary volume to said third storage system through a network;~~

~~said third storage system stores the data received from said first storage system into said secondary volume; and~~

~~when the data stored in said first primary volume is migrated to said second primary volume,~~

said first storage system migrates data stored in said first primary volume to said second primary volume in said second storage system during remote copying of data from said first or second storage system to said third storage system,

said network apparatus transfers an access request issued from the host computer and destined to said first primary volume, to said second primary volume during said remote copying of data from said first or second storage system to said third storage system,

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_____wherein said remote copying of data from said first or second storage system to said third storage system includes,

said second storage system receives, from said first storage system, management information for identifying data to send to said third storage system,

said second storage system stores write data received from the host computer and the data received from said first storage system and stored in said first primary volume, into said second primary volume, and sends data determined based on said management information out of the data stored in said second primary volume, to said third storage system, and

said third storage system stores the data received from said first or second storage system, into said secondary volume.

2.   (Original)   A remote copy system according to Claim 1, wherein:

according to an instruction from a management terminal, said network apparatus converts access target identification information included in the access request received from the host computer into identification information of said second primary volume, and sends the converted access request to said second storage system; and

according to an instruction from said management terminal, said second storage system receives the data stored in said first primary volume from said first storage system and stores the received data to said second primary volume, and sends the data stored in said second primary volume to said third storage system.

3.   (Original)   A remote copy system according to Claim 1, wherein:

the management information, which said second storage system receives from said first storage system, further includes information managing write order of data written by the host computer; and

said second storage system uses said information managing write order to manage write order of the write data received from the host computer.

4.   (Currently Amended) A remote copy system according to Claim 1, wherein:

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until, ~~out of data written to said first primary volume,~~ data to be stored into said secondary volume has been completely transferred, said third storage system receives said data from said first storage system and stores said data into said secondary volume.

5.   (Currently Amended) A remote copy system according to Claim 1~~Claim 4~~, wherein:

until, ~~out of data written to said first primary volume,~~ data to be stored into said secondary volume has been completely transferred, said third storage system receives said data from said first storage system to store said data into said secondary volume, and also receives said data which said second storage system has ~~is~~-received from the host computer, from said second storage system to store said data into said secondary volume.

6.   (Currently Amended) A remote copy system according to Claim 5, wherein:

data received by said third storage system from said first storage system or from said second storage system is given ~~with~~-a sequence number; and

said third storage system stores data received from said first storage system or from said second storage system, in order of the sequence numbers, into said secondary volume.

7.   (Currently Amended) A remote copy system according to Claim 6, wherein:

said management information, which said second storage system receives from said first storage system, further includes a sequence number whose value is larger by one, than a newest sequence number given to data that said first storage system receives from the host computer; and

said second storage system gives write data sequence numbers to write data received from the host computer, with an initial value of said write data sequence numbers being the sequence number included in the management information received from said first storage system.

8.   (Currently Amended) A remote copy system which copies data between a plurality of storage systems, comprising:

a host computer;

a first storage system comprising <u>a first controller and </u>a first primary volume;

a second storage system comprising <u>a second controller and </u>a second primary volume; and

a third storage system which is coupled to said first storage system and said second storage system, and which comprises a <u>third controller and a </u>secondary volume; wherein:

~~said first storage system stores data received from the host computer into said first primary volume, and sends the data stored in said first primary volume to said third storage system through a network;~~

~~said third storage system stores the data received from said first storage system into said secondary volume; and~~

~~when the data stored in said first primary volume is migrated to said second primary volume,~~

<u>said first storage system migrates data stored in said first primary volume to said second primary volume in said second storage system during remote copying of data from said first or second storage system to said third storage system,</u>

said host computer sends a write request issued from an application program executed by the host computer and destined to a primary volume, to said second primary volume of said second storage system<u> during said remote copying of data from said first or second storage system to said third storage system,</u>

<u>wherein said remote copying of data from said first or second storage system to said third storage system includes,</u>

said second storage system receives, from said first storage system, management information for identifying data to send to said third storage system,

said second storage system stores write data received from the host computer and the data received from said first storage system and stored in said first primary volume, into said second primary volume, and sends data determined based on said management information out of the data stored in said second primary volume, to said third storage system, and

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said third storage system stores the data received from said <u>first or said</u> second storage system, into said secondary volume.

9.   (Currently Amended) A remote copy system for copying data between a plurality of storage systems, comprising:

a first storage system comprising <u>a first controller and</u> a first primary volume;

a second storage system comprising a <u>second controller and a</u> second primary volume;

a management apparatus that connects said first storage system and said second storage system to a host computer; and

a ~~second~~<u>third</u> storage system comprising <u>a third controller and</u> a secondary volume; wherein:

——— ~~said first storage system stores data received from the host computer into said first primary volume, and sends the data stored in said first primary volume to said second storage system through a network;~~

——— ~~said second storage system stores the data received from said first storage system into said secondary volume; and~~

——— ~~when the data stored in said first primary volume is migrated to said second primary volume,~~

<u>   said first storage system migrates data stored in said first primary volume to said second primary volume in said second storage system during remote copying of data from said first or second storage system to said third storage system,</u>

said management apparatus sends an access request received from the host computer and destined to a primary volume, to said second storage system <u>during said remote copying of data from said first or second storage system to said third storage system,</u>

<u>   wherein said remote copying of data from said first or second storage system to said third storage system includes,</u>

said second storage subsystem receives, from said first storage subsystem, management information for identifying data to send to said second storage system,

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said second storage system stores write data received from the host computer and the data received from said first storage system and stored in said first primary volume, into said second primary volume, and sends data determined based on said management information out of the data stored in said second primary volume, to said second storage system, and

said ~~second~~ third storage system stores the data received from said first or said second storage system, into said secondary volume.

10.   (Currently Amended) A computer program product for performing remote copying between a plurality of storage systems, said computer program product comprising:

a code for storing ~~that a first storage system having a first primary volume stores~~ write data received from a host computer into a ~~said~~ first primary volume of a first storage system;

a code for sending ~~that said first storage system sends~~ said write data from said first storage system to a third storage system having a secondary volume through a network;

~~a code that said third storage system stores said write data received from said first storage system into said secondary volume, when data stored in said first primary volume is migrated to a second volume owned by a second storage system;~~

a code for migrating data stored in said first primary volume to said second primary volume in said second storage system during remote copying of data from said first or second storage system to said third storage system,

a write request transfer code for transferring ~~that~~ a write request generated by the host computer and destined to a primary volume ~~is transferred~~ to said second storage system during said remote copying of data from said first or second storage system to said third storage system,

wherein said remote copying of data from said first or second storage system to said third storage system includes;

a code for sending to said second storage system ~~that said first storage system sends~~ management information for identifying data to send to said third storage system, ~~to said second storage system;~~

a code ~~that said first storage system sends~~ for sending data stored in said first primary volume to said second storage system;

a code for storing ~~that said second storage system stores~~ write data received from the host computer and data received from said first storage system, into said second primary volume;

a code for sending ~~that said second storage system sends~~ data identified based on said management information, out of data stored in said second primary volume, to said third storage system; and

a code for storing ~~that said third storage system stores~~ the data received from said first or said second storage system in said third storage system;

a computer readable storage medium for storing the codes.

11.   (Currently Amended) A computer program product according to Claim 10, wherein:

said write request transfer code comprises a code ~~that~~ changes a volume associated with primary volume identification information included in the write request generated by the host computer ~~is changed~~ from said first primary volume to said second primary volume.

12.   (Original)   A computer program product according to Claim 11, wherein:

said write request transfer code is stored in a memory of a network apparatus coupled to said first storage system, said second storage system and the host computer; and

said network apparatus executes said write request transfer code, to send the write request, which is received from the host computer, to said second primary volume that is associated with the primary volume identification information included in the write request.

13.   (Original)   A computer program product according to Claim 10, wherein:

said write request transfer code is stored in a memory of the host computer, and comprises a code according to which a write request from an application program executed by the host computer is controlled to be sent to said second storage system.

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14.   (Original)   A computer program product according to Claim 10, wherein:

said management information sent from said first storage system to said second storage system further includes information for managing write order of data written by the host computer; and

said computer program product further comprises a code that said second storage system uses said information managing write order, which is received from said first storage system, to manage write order of write data received from the host computer.

15.   (Currently Amended) A computer program product according to Claim 10, further comprising:

a code <u>for providing</u> that, until, ~~out of data written to said first primary volume,~~ data to be stored into said secondary volume has been completely transferred, said third storage system receives said data from said first storage system and stores said data into said secondary volume.

16.   (Currently Amended) A computer program product according to Claim 10, further comprising:

a code <u>for providing</u> that, until, ~~out of data written to said first primary volume,~~ data to be stored into said secondary volume has been completely transferred, said third storage system receives said data from said first storage system and stores said data into said secondary volume, and also receives data that is received by said second storage system from the host computer, from said second storage system and stores said data into said secondary volume.

17.   (Currently Amended) A computer program product according to Claim 15, wherein:

data received by said third storage system from said first storage system or said second storage system is given ~~with~~ a sequence number; and

and said program product further comprises a code that said third storage system stores data received from said first storage system or said second storage system, in order of <u>the</u> sequence numbers, into said secondary volume.

18.   (Currently Amended) A computer program product according to Claim 17, wherein:

said management information, which said second storage system receives from said first storage system, further includes a sequence number whose value is larger by one, than a newest sequence number given to data that said first storage system receives from the host computer; and

said program product further comprises a code that, in said second storage system, gives write data sequence numbers to write data received from the host computer, with an initial value of said sequence numbers being the sequence number included in the management information received from said first storage system, and sends said write data to said third storage system.